

Committee on Resources,

Subcommittee on Energy & Mineral Resources

[energy](#) - - Rep. Barbara Cubin, Chairman

U.S. House of Representatives, Washington, D.C. 20515-6208 - - (202) 225-9297

Witness Statement

**STATEMENT OF BOB ANDERSON
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HOUSE RESOURCES SUBCOMMITTEE ON ENERGY & MINERALS RESOURCES
"GEOTHERMAL RESOURCES ON PUBLIC LANDS; THE RESOURCE BASE AND
CONSTRAINTS ON DEVELOPMENT"**

MAY 3, 2001

Madame Chairman and members of the Committee, I appreciate the opportunity to appear here today to discuss the Bureau of Land Management's (BLM) geothermal leasing program. I am accompanied by Harry Corley, a geologist with the Minerals Management Service (MMS).

The BLM, pursuant to the Geothermal Steam Act of 1970, as amended, is responsible for leasing Federal lands and reviewing permit applications for geothermal development. This authority encompasses about 570 million acres of BLM land, National Forest System lands (with concurrence of the Forest Service), and other Federal lands, as well as private lands where the mineral rights have been retained by the Federal Government.

Geothermal energy is heat derived from the earth. It is the thermal energy contained in the rock and fluid that fills the fractures and pores within the rock in the earth's crust. Geothermal resources, in reservoirs of steam or hot water, are available in several western states, Alaska, and Hawaii. The highest temperature resources are generally used only for electric power generation. Low and moderate temperature geothermal resources are used for heating of buildings, industrial processes, greenhouses, and aquaculture.

BLM's Geothermal Program

Much of the geothermal activity on Federal lands takes place in California and Nevada. California has 83 leases, 23 of which are producing, while Nevada has 126 leases, 27 of which are producing. More than 80% of the electrical generation from Federal geothermal resources occurs in California. Other states with geothermal activity include Utah, New Mexico and Oregon. The BLM's geothermal program has 51 producing leases. The BLM administers the 29 power plants using Federal resources in California, Utah and Nevada. The plants have a total capacity of 1250 MWs, and supply the needs of 1.2 million homes. Annual electricity sales from these plants exceed \$400 million.

The BLM places a priority on completing leasing and permit applications expeditiously. Leasing issues we are facing include whether planning documents adequately address developing environmental, cultural, and specific plant and animal concerns. We are streamlining the review process to address pending lease

applications and working to improve coordination with cooperating Federal, State, and county agencies. Due to industry expectations for new power plant projects located on Federal lands, we expect to receive a dramatic increase in both permit and right-of-way applications.

Recently, increased interest in geothermal development has occurred in Nevada. Nevada's population growth and regional energy demands are stimulating a rapid increase in interest to develop geothermal resources for electrical generation. Since the beginning of 2001, Nevada BLM has received 44 noncompetitive lease applications totaling approximately 100,000 acres. The geothermal industry has also requested BLM Nevada conduct a competitive lease sale by this summer. The noncompetitive applications and the lease sale will nearly double acres leased in Nevada. Operators have stated publicly that they expect to develop 200 to 500 megawatts of new generation capacity over the next two to five years. The President's FY 2002 budget request provides the BLM with an additional \$50,000 to process geothermal lease applications and the increase in the number of permit applications in Nevada. BLM Nevada is also reassigning staff and program resources to address the increasing workload.

Leasing

Public lands are available for leasing only after they have been evaluated through BLM's multiple-use planning process (National Environmental Policy Act, NEPA, and Federal Land Policy and Management Act, FLPMA). Stipulations may be placed on leases to protect other resources through mitigation or restrictions on surface use. For example, geothermal leasing is not allowed on lands within National Parks, wilderness areas, wilderness study areas, or National Recreation Areas. There are two processes for leasing geothermal resources - competitive and non-competitive.

Federal lands located in a Known Geothermal Resource Area (KGRA) are leased competitively, and any Federal lands not located in KGRAs are leased noncompetitively. BLM designates KGRA based on: a) geologic and technical evidence, b) proximity to wells capable of production in commercial quantities, and c) existence of competitive interest. BLM currently has 48 designated KGRAs. They are located in California, Nevada, Oregon, Utah and New Mexico. A lease may be no larger than 2,560 acres. Leases are issued for 10 years. As long as commercial quantities of geothermal resources exist, the leases may be extended for up to 40 years. The BLM currently manages 139 competitive leases (totaling 174,000 acres) and 148 non-competitive leases (totaling 173,000 acres).

Federal lands located in a KGRA are leased through a competitive sale using sealed bids. BLM state offices determine how often to conduct competitive sales. Prior to a sale, the BLM makes a Determination of NEPA Adequacy (DNA) assuring that the requirements of NEPA, the Endangered Species Act, and cultural resource policies are satisfactorily addressed. Those lands that have been cleared for leasing are parceled, and stipulations prepared, and published in a Notice of Competitive Geothermal Lease Sale. BLM establishes a minimum acceptable bid for each parcel, but this information is not disclosed to the public. All bids are opened, and the highest bid meeting or exceeding the minimum acceptable bid is awarded the lease.

An applicant may file noncompetitive lease offers for any Federal lands not located in a KGRA. The BLM state and field offices review the lands receiving offers for availability and prepare DNAs. Stipulations are prepared for those lands that have been cleared for leasing.

Federal Revenues

The Federal Government charges a royalty on geothermal production that is between 10% to 15% on the

amount or value of the heat or energy produced on the lease. Most leases are at the 10% royalty rate. Federal revenues are disbursed according to the following Reclamation Act formula: 50% to the State in which the lease is located; 40% to the Reclamation Fund; and the remaining 10% to the United States General Fund.

The following table displays the geothermal revenues collected in the past 4 calendar years.

(In millions)	1997	1998	1999	2000
California	\$ 20.3	\$ 13.8	\$ 8.9	\$ 14.3
Nevada	5.3	4.3	0.9	1.5
Utah	0.2	0.2	0.2	0.2
Total	\$ 25.8	\$ 18.3	\$ 10.0	\$ 16.0

Note: New Mexico revenues not listed because they are less than \$1,000 per year. The leases in Oregon are not producing.

In most cases, Federal royalties track the value of electricity which is normally the end product of geothermal production. Price differences explain the fluctuations in year-to-year revenue collections shown in the table. The MMS calculates royalties for Federal geothermal resources through indirect methods because few Federal geothermal resources are subject to a sales transaction on which to base the value for royalty purposes. This is due to the fact that most Federal geothermal lessees are also owners of the electric generating power plant.

Madame Chairman, I hope this gives the Committee a better understanding of the BLM's geothermal leasing program. I would be pleased to answer any questions that you or the other members of the Committee may have.

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